

Aviation News

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SEPT. 2, 1946



First Flying Twin-Engine Helicopter: Built for U. S. Navy by McDonnell Aircraft Corp., XHJD-1, world's first twin-engine helicopter to fly takes to air in test flight at St. Louis. Two 450-hp. P & W Wasp Jr. engines give over 100-mph. cruising speed and lift useful load of up to 4,000 lb. (See story on page 9.)

Aircraft Industry Slated To Start Building Houses

FHA gives initial order for 10,000 prefabs to utilize plane making facilities; two to six companies involved.....Page 7

State Dept. Becomes Key To International Routes

CAB completion of cases shifts burden for securing operating rights essential to world-girdling U. S. lines.....Page 33

Nonscheduled Carrier Plans "Coach Type" Service

Will make bid for passenger business in U. S. and Caribbean with 30-passenger DC-3s giving lower rates.....Page 15

NACA Formula To Help Cut Lightplane Prop Noise

Design criteria, to be available to industry Sept. 15, said to make possible propellers inaudible at 300 ft.Page 27

Washington Observer



CLAYTON URGES MORE ATTACHES—Undersecretary of State William Clayton will start a quiet campaign shortly to expand the number of U. S. civil air attaches throughout the world. Advance budget estimates for the next fiscal year will be larger for this program, but no figures will be decided upon in the near future. Meanwhile, Clayton and Commerce Department officials, including William A. M. Borden, will seek first a rough agreement on general policy. Some State Department authorities below the Clayton stratosphere, however, have been attempting to block further appointments, claiming that other attaches will demand a network of special attaches also, such as economic specialists. Sterling Correll, ex-Navy attaché, recently left for Bogota, Colombia, Perry Warner from State's Aviation Division has been assigned to Beirut and Frank Jones, also from the Division's Washington office, will leave in the near future for China.

In reporting news items on a glaring momentary State Department officials last week were considerably surprised by a letter from an indignant aircraft manufacturer—Cessna—who had written to the President of the United States complaining about the difficulties and delays in shipping lightplanes out of the country. The White House forwarded the complaint to State. Commerce Department sympathizers might be oblivious of some obstructive regulations by the National Maritime Control Board, but don't expect serious oversight. Too many bureaus and boards are involved. However, the long-term trend, as they try in Washington, is improved.

STEWARDESSES ARE RECOGNIZED—National Mediation Board members have seen some unusual scenes in the Board's history but the first one for stewardesses popped up the other day, and it was officially certified as the representative of Women and Inland Houses, under the Railway Labor Act. It's the Air Line Stewardesses Association, with 75 members.

NEW AIR TRAVEL CARDS—These air travel cards modeled 1941-1942 and finally scheduled for introduction Jan. 1, 1947, under an amended air travel plan the Air Transport Association is completing. Holders of new cards will be able to use their card throughout the world, rather than in the U. S. and Canada only. Unlike present passports, one type of card will permit travel in Continental North America, Britain, West Indies, Bermuda, and Hawaii. Another card would be universal, it is contemplated, of course, that many since foreign airlines will join the present passport plan in the plan. One proviso is that each cardholder will carry passport. Inland insurance of at least \$40,000 per passenger.

INTRODUCING IN CHINA—Fus behind the smoke arising from U. S. surplus disposal aircraft in China is the Chinese desire to get foreign aid to foot the bill for the costly airport rehabilitation program necessary for widespread commercial air operations. Jetty-built wartime fields constructed by both American and Japanese have deteriorated to the point where commercial operations are nearly nearly everywhere. According to a few sources in Washington, the Chinese hope to play their approval of landing rights on their nose to win a jackpot of foreign airport funds. On the other hand, starting up the surplus disposal market in which China obtained all her commercial aircraft is the way out American diplomats propose to bring counter-pressure and jump the net.

P. O. HUNTING BAD WEATHER—Aviation booster Gail Sullivan, Second Assistant Postmaster General, tells the Los Angeles helicopter mail men may have been too successful, and with May companies will operate three helicopter routes out of Chicago during the month of October serving 136 mail routes. He hopes the Chicago weather will be helped with winds, rain and poor visibility. Los Angeles climatic conditions did not offer enough operational difficulties. Meanwhile, hearings on applications for Los Angeles routes will be held in that city Sept. 18, and Sullivan will be on hand with department officials to plead for quick action.

CAB WATCHES FREE RIDES—Civil Aeronautics Board has served notice to the airlines that it is watching for instances of unseasonable reduced rates to free transportation. The Civil Aeronautics Act of 1938 severely restricts such activities by air carriers. The Board has told the airlines it will act to enforce the law in the future. Some top airline executives complained that they have been forced to take chances because their competitors were offering certain individuals free trips. ATA President Lund, however, followed up the CAB warning with the observation that this was a matter in which the industry should do an own housecleaning. So don't expect a release to the post-1938 day when almost any good friend of an airline could win a free ride.

CESSNA WRITES PRESIDENT TRUMAN—A campaign to wipe out some of the red tape involved

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AVIATION NEWS

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News Digest

DOMESTIC

AAF accident rate for June was the lowest since V-J day with 168 major AAF accidents within the continental U. S. compared to the wartime peak of 2,048 in August 1943.

All 48 states have accepted their allotment of air National Guard units. Units are now activated in 26 states, the District of Columbia and Alaska.

Eight persons were killed and more than 20 injured in an explosion of volatile jet fuels at the Azusa, Calif. plant of Aero-Jet Engineering Corp.

AAC will send 500 officers to school in civilian colleges and universities this fall as a supplement to the program of its Air University at Maxwell Field, Ala.

FINANCIAL

Glenn L. Martin Co. declared a third quarter dividend of 75 cents a share payable Sept. 13 to stockholders of Sept. 3. All officers and directors were re-elected.

Solar Aerosol voted a dividend of 18¢ a share on common stock, payable Sept. 12 to stockholders of record Aug. 31. Backlog of unsold orders is about \$18,000,000. Net sales for the fiscal year ended April 30 were \$23,770,333.08.

Douglas Aerosol announced a dividend of \$3 per share on 800,000 shares outstanding, to be paid Sept. 30 to stockholders of record on Sept. 6.

North American sales of \$480,481,514 during 1995 produced consolidated net income, after all charges, of \$7,520,359 for the fiscal year. Total earnings were equivalent to \$2.26 per share on 3,328,632 shares of outstanding capital stock. Bookings were \$20,000,000.

FOREIGN

Bellini's Air Commodore Frank Whittle, inventor of the jet engine, has been awarded 1946 winner of the Daniel Guggenheim Medal for meritorious achievement.

Wing Commander Lawrence Egglesfield was named director of civil aviation in the British West Indies.

RAF Lancaster set a new England-New Zealand record of 69 hours.

Work has begun on the site for the British government's \$20,000,000 aerological research station near Bedford.

Industry Observer



Republic Thorndyke (P84) cracked the world speed record (606 mph) last week at Muroc, Calif. Because its margin was less than the 626 mph already cracked unofficially by an RAF Gladius Nova, RAF officials attempted to claim the P84 effort as money. Another attempt will be made soon with rubbers.

► Brazil has begun survey flights as its newly awarded Latin American routes to Rio de Janeiro and Buenos Aires.

► Douglas is holding up development of the DC 8, commercial version of the SB-11, because until more powerful jet engines are available.

Corvair's Model 240 is still acquiring its fans and is not expected to drop before January.

► Argentine government is planning large scale glider purchases for airborne training and sport purposes. Alfredo L. Pincherini, chief of its civil aeronautics glider bureau, is currently requesting the U.S. glider industry but does not have authority to make purchases.

▶ Some AAP experts are worried about defense of the D-35 on long-range missiles. Its proposed parents fighter will offer little defense against a barrage of target-seeking, fish rockets and an extremely slow speed and extreme bulk should make it no easy target. These experts predict its chief ally, will be as a long-range transport of military troops.

► Storage of parts will delay test flights of the four-place Wheeler IIIA at retail rental plant until late October

► Aircraft industry as the Los Angeles area will add 6,500 employees in 1990, according to United States Employment Service survey. Requirements of the industry before Nov. 15 include 4,200 workers in airplane factories, 200 for engine assemblies and 900 for parts manufacturers.

► Empire Air Lines, Louisville, Mo., spent approximately \$45,000 on its first year fight for a free-lance outposts. Contributed to the West Coast area, Empire hopes to amortize this amount over a five-year period.

Northwest Airlines reached an agreement with the International Association of Machinists to cover overtime pay on an hourly authorized basis to its pilots. Temporary pilots will be paid for 80 days at pay not less than 100% of the regular pay rate. After 80 days the pilots will be themselves for permanent assignment and paid for overtime work assignments on the basis of seniority. Northwest will face the bill for all basic living expenses of its permanent system.

▶ **Belton Van & Storage Co.** of California now offers house-to-house route service on disposal of household goods at 25 percent more than regular van rates plus a \$1 service charge.

■ Elin has two new types of lightplace fuses scheduled for late fall production. Design changes include a flat bottom on the top and main section instead of the conventional V and a square foot deck instead of the usual oval shape. One type will handle plates of the type and weight of the Paper Supercut and the other for heavier personal plates.

► Southern Arizona Airflow of Tucson will ask for eight semistar helicopters.

► **Three Canada Air Lines officials doubt if the company can start DC-10 service early in 1987, as previously planned. They have submitted a report to the government requesting expenditure of more than \$100,000,000 to see if it is possible to improve virtually every airport TGA uses, from coast to coast. Improvements must be implemented and strengthened at each base, and passenger facilities and catering. Hardly more than 10 percent of the infrastructure improvement is likely to be done this year, however.**



Question: HOW TO BOOST AIR FREIGHT PROFITS?
Answer: EQUIP WITH CARGO VERSIONS
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Aircraft Industry Will Make Aluminum Houses for Veterans

16,000 unit order already given by FHA in program to utilize plane manufacturing facilities for breaking housing bottleneck; Payment Act 90% guarantee applies.

By BLAINE STUBBS

Two to a half dozen aircraft manufacturers are expected soon to announce participation in the government's prefabricated housing program.

Under the Payment Act, the Federal Housing Administration guarantees manufacturers 98% of cost through purchase by 90% of houses not sold.

Aircraft companies will concentrate on FHA approved designs in aluminum, and in combination with plywood and insulation while other companies will build prefabs of steel and other materials. Designs will be furnished to the manufacturers. Plans by the Lincoln Homes Corporation of New York are strongly favored.

16,000 Unit Deal—FHA, and aircraft companies in negotiations, decided to talk for publication, but FHA promises an early announcement on the program. Douglas engineers have spent 3 weeks with FHA experts. At least one aircraft company has received a letter of intent from FHA. McDonnell Aircraft, frequently mentioned as a supplier, is reported to have a design of its own, using panels of aluminum, stressed plywood, and rock wool insulation. FHA spokesmen say one deal already concluded with an aircraft firm was for 16,000 units.

Wilson Wyatt, FHA Administrator, has suggested that surplus airplane plants be leased the new enterprise be withheld temporarily from lease or sale to give airplane companies priority on them for this purpose. War Assets spokesman said that issue was "dynamic" but a decision was imminent.

The aggressive Wyatt, directing this private interests build

a half million houses for vets before 1946, is said to have turned Administration head on aircraft companies who, because of government orders, leases and contract obligations are likely susceptible.

Martha Douglas—Owens-Illinois, Bell, Partridge, Curtiss-Wright, Consolidated-Vultair, North American and Douglas, besides Douglas and McDonnell, have been in the discussion. Martin seems definitely out because he has his own housing-building program. Boeing say they cannot undertake any job that requires more manpower.

Some observers believe aircraft engineers who don't try house production, especially with a guarantee against loss, are short sighted. Many home-builders don't like the machine-like metal prefabs. But will take them rather than nothing.

The low price—under \$6,000, compared to \$10,000 to \$15,000 for conventional houses—is a strong factor in opening economy demand. If millions of refugees and veterans, among the buyers, are converted into a sensible industry might result.

FRANK Power Builders—The metal

prefab project is a powerful shift of focus building from the construction industry to the factory production line, which can utilize a permanent substantial price advantage. Building contractors are fighting the factory trend.

Major problems of the aircraft companies will be distribution and service. FHA hopes to line up for their cash distributions or equivalent stores or materials firms like Johns-Manville. Macy's at New York has already erected over 1,000 prefabs. One authority says \$5,000 of the Lincoln type house would sell at once in the Los Angeles area.

Numerous units of the Lincoln design, produced in the company's plant at Martins, Va., have been erected and are in use. The 3-bedroom unit will sell at about \$5,000 less list, 3-bedrooms at \$4,000; 4-bedrooms at \$4,500—including wiring, water pipes, and heating. Panels are aluminum in 2 sides with plastic filler for stress and insulation, are 6 by 4 ft., 2 in. thick for the walls and 3 in. for the floor, which is stressed for 7 feet of span.

Concrete Floor—Floor is cement poured on metal grill, 3 in. thick. Joints are overlapped with screws held addition of resin-treated plastic filler holds main load. Two panels are used over a two-bay beam weighs 1 ton. There is no basement. Company is also experimenting with multi-story design.

Nearly all war-surplus aluminum sheet has been used so far and taking in urgent build-



Aluminum Prefabs: Lincoln Homes Corp. prefabricated house, a design favored by Federal Housing Administration officials who have been urging aircraft manufacturers to turn to house production.

ing projects, particularly none relevant for the petrich program. Civilian Production Administration has removed from VHA specifications of aluminum sheet and other materials to be manufactured, presumably under previous. Most aluminum sheet for petrich will be 12 to 36 gauge—918 to 451 in.

Cosmic Ray Probe Will Attack Mesons

AAU and MIT will equip second Superpro to study cosmic energy after first break up.

Researchers are proping for knowledge of the upper space they have to penetrate by jet rocket and radio.

The AAF-Berkeley-National Geographic survey of cosmic rays at high altitudes in a B-29, across 4,000 miles of latitude between the U. S. and Chile, will be followed by a new-level deepened study.

Massachusetts Institute of Technology and AAF will equip a second B-29 for investigation of mesons, cosmic rays released when cosmic rays break up on contact with the atmosphere. The energy of mesons might explain the stacking of atoms after their annihilation as a source of power.

3 Experiment Afloat—Dr. W. F. C. Swann, director of the Rural Research Foundation, Franklin Institute, Philadelphia, reporting his survey with AAF and Geophysicists, observed that radio and electronic equipment were seriously affected when kept at high altitude more than a few hours. At a Washington press conference he suggested extensive modifications of such equipment might be necessary for all-plate work.

Anthropologists in the Bureau of Standards said they were skeptical of results obtained on the AAF B-29 test. So far as they knew, any interference would show up once, not necessarily after a period of exposure. They advised that high altitude flights of long duration, over a period of years, have not revealed any definite pattern of interference. Nevertheless they agreed all possible study is desirable.

Very little is known of cosmic rays, except that they exist, approach the earth at various angles, and can penetrate in feet of lead in breaking up against atmosphere they may initiate other forces of energy, such as gamma rays. In the tests, three Geiger counter tubes



Cosmic Ray Research: Cosmic rays found at altitudes ranging from 5,000 to 35,000 ft. are measured on banks of Geiger counters (center) in a converted B-29 bomber which is being used under sponsorship of National Geographic Society, AAF and Berzel Research Foundation. Ed Kirtzman and Peter Morris operate the apparatus.

were superimposed so that any rays passing on all three had to be vertical. Only the vertical rays were counted.

3 Ship Research—National Geographic's further shipboard results will be checked against the B-29 tests data. Intensity of cosmic rays varies with latitude, and with intensity of the earth's magnetic field. Then the test was made to establish the magnetic equator, median between north and south magnetic poles, which crosses near northern Chile. Maximum intensity at 57,000 feet was established by 3025 and Air Corps with Geiger counters in world's highest balloon, at 72,000 feet, in 1935.

Dr. Swann said that millions of metal marbles, from radio case to big hunk, daily burn themselves up on contact with the outer atmosphere and will remain before long flying. He suggested that radar may detect them and automatically charge course to avoid collisions.

BLADES OVERLOADED

Experimental twin-engine Lockheed helicopter No. 2 was destroyed, at Los Angeles recently, when tips of three blades failed under a pull-out load after the aircraft was in a power glide at 206 ft altitude. Pilot H. D. Houston escaped with minor scratches. The helicopter has been undergoing successful flight tests continuously for a month prior to the crash, which happened during

tests for the AAF. One photograph is being studied to determine the reason for failure. The first Lockheed helicopter crashed when a rotor blade was torn from the hub on flight.

AVIATION CALENDAR

- Aug. 10-11, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 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not instead of the risers, and also are attached to the sides of the fuselage, near the bottom. A conventional tailwheel completes the assembly. Virtually the entire nose of the aircraft is transparent plastic, giving excellent visibility.

The engine nacelles have large front air intakes for cooling the engines which give the aircraft the appearance of a jet-engine helicopter, and have curved cowls to insure smooth airflow. The fact that McDonnell is also manufacturing another helicopter with jet power, still endorsed by the Navy, has also added to industry confusion.

Eastern Streamlines Management in Field

A streamlined management plan to speed up administrative procedures was announced by Eastern Airlines president, E. V. Rickenbacker, following a four-day company conference in Miami. The plan includes appointment of an advisory board of directors and a field board of directors to function with regular offices and directors. The newly formed boards will meet monthly in one of the 60 cities on Eastern's routes.

C. W. Franke, Miami, vice-president—maintenance and engineering and J. and Osborne, New York, vice-president—traffic and sales will head the two boards. L. B. Arnold and M. M. Frost, vice-presidents in

New York are co-chairmen of the boards.

Paul E. Reinhold, Jacksonville, Fla., president of Perimeter Airlines was elected to Eastern's regular board of directors. W. L. Hammett, Jr., formerly New England district traffic manager, was appointed director of traffic procedures for the entire system.

Other industry personnel changes are:

• **TWA**—Slugh Herndon, round the world pilot and veteran of the RAF

Surplus Transport Sales

War Assets Administration has announced sales of 30 Douglas twin engine cargo planes at three locations, starting Sept. 16. Deliveries are locations of WAA storage depots at which the sales will be made.

• **Ontario, Calif.**—five C-47s, with prices ranging from \$15,000 to \$22,000.

• **Wichita, Kan.**—one C-47s, with prices ranging from \$15,000 to \$20,000.

• **San Diego, Calif.**—with prices ranging from \$12,000 to \$20,000, and two C-47s, with prices ranging from \$10,000 up to \$17,500.

WAA has also received bids on three C-47 and one TAD Douglas cargo planes, seven AT-33s, two AT-7s and two F-26s, all from one bidder's completed, and

eight BAH Sikorsky helicopters. Bids will be opened Sept. 14, and the planes will be available for inspection from Sept. 9 through Sept. 13, at the following locations:

• **Calif.**—One, each, at Patterson Field, Ohio, Goddard base, Mo., and Tusler Field, Ohio.

• **Kan.**—One at General Poston Naval Station, Ill.

• **AT-33s**—Three at Keesler Army Air Field, Miss.; two at Chanute Field, Ill.; and one, each, at Paducah Field, Ohio, and Chatham Field, Pa.

• **AT-7s**—One at Kelly Field, Texas, and one at Tusler Field, Ohio.

• **F-26s**—Two at Buckley Field, Colorado.

• **B-26s**—Eight at Sheppard Field, Tex.

Ferry Command, has been named chief pilot of the Atlantic-Middle East region.

• **Wiggins Airways**—Harry Kent has been named operations manager. He was formerly with Pan American Airways as a pilot, is a graduate of the University of Wisconsin and has been in aviation for 30 years.

• **Aviation Maintenance Corp.**—E. S. Steel, formerly executive vice-president of Aircraft Components, has been appointed secretary treasurer.

• **Norfolk**—Col. Stewart W. Towle, Jr., former chief of staff of the 10th Fighter Command, has been named Washington representative.

• **Norwegian Airlines**—Capt. Gert Møller has been appointed North American representative with headquarters in New York. He has been with the line since 1934 and served with the Norwegian Air Force during the war.

• **Boeing-Naval Airline Systems**—Mark J. Winkler, formerly an AAF engineering officer in the Middle East and the Pacific, has been appointed U. S. regional operations manager.

• **United Aircraft Products, Inc.**—Edward F. Baker has been elected president and director in succession to Frank Sorenson who retired due to illness.

Airline Radar Tests Show Flaws for Commercial Use

While military use of radar has proved successful, American Airlines experiments have proved it



NEW METEOR:

Standard version of the Gloster Meteor, British jet-propelled fighter, now has clipped wings, reducing the span from 42 to 39 ft. The Meteor stretches out to the tip of the wing. Despite the dramatic percentage drop, it is not expected that the aircraft's performance will be much changed due to other factors. (The Airplane photo.)

unsuitable for airline use. Capt. Sam P. Holst, manager of AEA's development section, said the military services could bear heavily on the law of probability and take calculated risks in the use of rubber, but the airlines must have an instrument perfect enough to give the faith of pilots and the assurance the pilots would use it.

Disadvantages to airline use of rubber:

The present scope does not show brightly enough in the cockpit with light coming in the windows, but is effective only in a dedicated cabin. To increase the glow enough for airline use, the voltage would have to be increased 30,000 times.

The image on the screen is not three-dimensional.

U. S. Aircraft Exports Soar to \$100,000,000

Sales near 1939 level despite State Department ban on military exports, surplus big factor.

Exports of U. S. aviation equipment are expected to exceed \$100,000,000 this year, a figure nearly equal to that of 1938, despite a prohibition on exports of military aircraft, which in previous years accounted for a sizeable amount of the United States export trade in aircraft.

The reported figure for this year is reported by C. M. Cook, recently named head of foreign aircraft trade promotion of the Office of International Trade of the Department of Commerce. Cook asserts that export of aircraft profits in 1948 are the upgrade with the June total of \$10,174,454 being nearly one-third of the total for the first six months of the year.

Full 442 Planes—Total exports for the first six months of 1948 were \$26,017,348, included in which were 442 complete aircraft. About 30% of total exports went to ten countries.

France	.....	\$7,452,584
Canada	.....	\$2,018,115
United Kingdom	.....	\$1,762,440
Sweden	.....	\$1,580,134
Brazil	.....	\$1,049,040
Netherlands	.....	\$1,045,941
Spain	.....	\$1,014,971
Australia	.....	\$1,011,515
Belgium	.....	\$1,008,540
South Africa	.....	\$1,004,561

These countries are the same markets that predominated in our aircraft export trade before the war, Cook states. He figures for the first half of this year available av-

NEW FRENCH PLANE:

Designed particularly for postal service, SO-93 has a gross weight of about 14,500 lb., although powered by relatively small engines, two Renaults of 450 hp each. Speed is 425 ft., length 29 ft., cruising speed 250 mph at 4,500 ft. Range is about 750 mi.

plus aircraft sold from domestic stocks by the Office of the Foreign Legislation Commissioner, and so not a true gauge of the industry's participation in the overseas trade market.

How much of the total export figures constitute surplus sales is not definitely known, although it had been estimated as high as forty or fifty percent. Cook expects that surplus sales in export will decline rapidly far the balance of this year to a point where they will be probably not more than five percent of the total by beginning of 1947.

State Is Battleground—During the decade prior to the war, aviation exports accounted, in most years, for about 30% of the industry's total output. Cook doubts if that ratio can be maintained, at least not for some time while the domestic market for aircraft continues to be so strong.

Other sources point out that the main difficulty in regaining the pre-war ratio is the current ban by the State Department on export of military aircraft which constituted such a large part of the pre-war export sales.

The State Department had some time ago entered into an agreement with the British Government whereby each government undertook to ensure that the manufacturers of neither country would export military aircraft.

While the State Department has been rigid in rejecting export permits—except in some instances for surplus military transport which are intended to be converted to light transports—the British have accepted Vampires jet-propelled fighters planes to Sweden, has granted a manufacturing license to Sweden for the Vampire and a jet engine, has undertaken to re-equip the French air force, and has entered into similar agreements with other European nations.

Constellation Back In Foreign Service

Prospects are good that a sizeable fleet of Lockheed Constellations will be back in overseas airline service by mid-month.

Pan American already had the first of the modified planes in operation last week across the Atlantic, where it plans to use 12, and expected to start them in Pacific service in a few days. Others are to become available in rapid succession. Panair do Brasil, PAA of Brazil, also had two Constellations in service and was to receive a third soon.

These aircraft, like those BOAC planned to place in limited service to London Aug. 31, were the model 49-35 with auxiliary engines, modified in conformity with changes required by CAA in electrical, hydraulic, fire-lighting and fire-warning systems. BOAC will start with one or two trans-Atlantic flights a week, gradually increasing the number to seven.

TWA, meanwhile, was running the first 300-hr. government run on the model 49-36 with fuel injection with expectation it would have two or more of the craft in service not later than Sept. 15. TWA's Constellation fleet eventually will consist of 20 model 49-36 and 10 model 49-35s with sleeper facilities.

American Overseas Airlines, when all Constellations were grounded in mid-July had two newly in service, two others on the ground and one in Chicago on the way to delivery, doubts that the first of the fleet of 12 will be back in service before Oct. 1. Like TWA, AOA will not use the modified-91s, but will avail the 49-35s, the Royal Dutch Line, and Air France also were reported to be installing dual injection engines.

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SPECIAL AIR SERVICES

CHARTER NONSCHEDULED INTRASTATE

Nonscheduled Carrier Planning Air Coach Passenger Service

American Air Express & Import Co. aiming at variety of operations in U. S. and Caribbean with converted 36-passenger C-47s.

By CHARLES ADAMS

Backlog a trend which has chartered the crews of most important nonscheduled operators into the same fold, American Air Express and Import Co., New York and Miami, has become one of the nation's largest nonscheduled passenger airlines and intends to maintain its position long after artificial post-war business has waned.

AAXICO is already fitting its size DC-3s to the needs of rural lines by converting them into "air coaches" accommodating 36 passengers and a hostess. Three of the planes, with double seats on both sides of the aisle, are now in operation.

▶ **Flamingo Fleet**—Objective of AAXICO's president, Charles A. Carroll, who designed the seats, is to increase the passenger-carrying capacity of the "Flamingo Fleet" sufficiently to permit route reduction up to one-third. The low-cost transportation thus made available is to be used in commuter service between Puerto Rico and New York and in occasional short haul operations—especially intrastate vacation trips.

Carroll believes the low-income population in Puerto Rico cannot be reached by the de luxe service furnished by certificated airlines and that a flexible nonscheduled operator would tap a large group not now served by any carrier—either air or surface. If successful on this route, AAXICO proposes to extend similar service to other countries in the Caribbean or bordering the Gulf at Mexico.

AAXICO's recent operations have been mainly between New York and San Juan and New York and Atlantic City. During July the carrier flew an average of about two daily round trips on the former run and five daily round-trips on the latter.

▶ **Other Seasonal Trips**—If permitted by CAB regulations, AAXICO will continue to offer seasonal nonscheduled trips from New York to Atlantic City, Camden, N. J. (three nights), Miami and Caribbean points and may extend its operations to other Atlantic seaboard cities, to the Midwest and to Canada. Strictly charter or ad-hoc flights would also be flown from the company's fixed bases at Miami and New York.

The carrier holds a permit from the Cuban government authorizing flights and landing at points provided, New York, Havana, Santiago de Cuba, and Matanzas. This permit is limited to the capital city, but AAXICO officials believe it will soon be amended to include all of Cuba. With this in mind, studies are being conducted on the feasibility of either scheduled or nonscheduled flights radiating from Havana to Caribbean and Central American points. Seasonal operations from Havana to the U. S. would also be included in the plans.

▶ **Three Month November**—AAXICO's spectacular growth has taken place since November, 1945, when it started business with one plane, twelve employees and an original investment of \$14,600. The company now has nine planes and expects to acquire two more, has 150 employees and an assessed valuation of over \$1,000,000. Approximately 180 flights are made weekly and considerably over 12,000,000 passenger miles flown without mishap.

During May and June the Flamingo Fleet flew 601,360 revenue plane miles, carrying 8,216 lbs. of cargo 8,828,693 pound miles and 1,645 revenue passengers 4,798,386 revenue passenger miles. Total traffic revenue was \$278,948 and net loss for the two months was \$17,719. From May 21, 1945, to May 31, sales had totalled \$371,488 and profits \$60,181.

Company officers, in addition to Carroll, include Howard J. Kerth, vice-president and general manager, Thomas E. Canavan, Vice President, New York Division, Glen H. McFlew, secretary, and William J. Kerth, treasurer.



"Air Coach" interior: American Air Express and Import Co.'s new C-47s are being converted to accommodate 36 passengers in lightweight double seats drawn back sides of the plane's seats. Designed by AAXICO's president, Charles A. Carroll, the seats are upholstered in foam rubber, covered with postwar plastic material and constructed to utilize space previously wasted. Tests show the seat can carry more than a ton and that two adults weighing more than 200 lb. each can be accommodated with comfort, AAXICO states.

PRODUCTION

Prospects of Billion Dollar Year Seen For Reconverted Aircraft Industry

Recovery well advanced despite parts and material shortages and labor difficulties; some companies already showing profits; military business still 50 percent of total

By WILLIAM KNOGER

The aircraft industry, despite a recuperation problem greater than that of any other industry, despite material and parts shortages, and labor difficulties in both its own and suppliers' plants, will do a business this year of just about \$1,000,000,000. The industry, bolstered by industry sources on the best information available, means that in this first postwar year, the aircraft industry will sell more than three times as much as it did in 1918, last year before it was touched by the war.

It was expected during the war that the industry would emerge for strength, financially, than it was before. But the big question, which only peace could answer, was whether the world's largest industry could be torn apart, and rebuilt quickly enough to avoid complete destruction of even the much-improved financial structure.

Working Capital High—With two-thirds of the first post-war year gone, the answer to this question apparently is yes, with reservations. At the end of 1945, working capital of the industry was at the highest point in its history, judging from Securities & Exchange Commission reports of 33 companies which showed working capital of \$415,000,000. Due to the slowness of deliveries of aircraft, that figure undoubtedly has decreased, but how much is almost impossible to determine. On the other hand, some of the major companies, such as Martin and Douglas, made satisfactory profits for the first half of the year.

Now that the industry is now on a "peacetime" basis, the military business (using the term to include naval, as well) remains as both the strength and weakness of the industry. Of the billion dollars' worth of business expected

this year, military, including experimental projects, will be just about one-half. Complete civilian aircraft to number more than 25,000, will constitute about \$250,000,000 worth of business, with engines, propellers, instruments and parts accounting for the balance of the total.

Economy Threats—The weak feature of the military business is the unsettled question of governmental economy moves. National defense expenditures for fiscal 1946 total about \$11,900,000,000, of which AAF and Navy's Bureau of Aeronautics get a comparatively small part, less than \$2,900,000,000. There is no present disposition in the highest government circles to cutback or cancel contracts.

Research contracts are a large part of the industry's military

work. Here is where there might be some curtailment, both from a standpoint of economy, and by shutting-down in the area of general scientific research to eliminate duplication among the various areas of the services.

The degree to which military orders can affect the broader state of health of the industry can be judged by the backlog figure, which was \$1,059,987,500 at the end of June. While no breakdown into military and commercial classifications is available, it is known that military orders are roughly two-to-one to commercial orders in most of the large companies. And, surprisingly, military orders dropped some \$4,800,000 during May and June.

Backlog Descriptive—The military portion of the backlog assumes even more importance in view of the fact that the backlog for commercial planes is descriptive. On which there are many views—that the backlog have "increased," it is still true that the two largest backlogs are for types of planes that have not yet flown. And in the case of one of those planes, it is an open secret that some unwarmed "orders" for it are nothing more than expressions of interest.

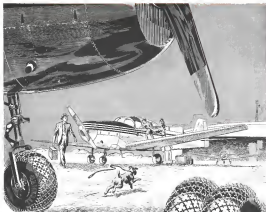
It is a natural desire on the part of airplane users to, in effect, "cover all bets," as industry circles have been doing for consumers goods. It remains to be seen how many "customers," per-



CESNA PRODUCTION LINE

With production scheduled to have passed the 25000-day mark in July, Cessna Aircraft Co. is on volume output of its Model 140 at Wichita.

America's Top-Quality Airplane Tire



Featured here is the A-100, the most reliable, product of North American Aviation, Inc., creator of the famous Mustang

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THE GENERAL
AIRPLANE TIRE

KNOWN "ROUND THE WORLD FOR QUALITY AND SAFETY"

tionally those of lightplane manufacturers, will accept delivery when the planes are ready.

With the exception of certain companies engaged almost entirely in experimental work, such as Messier (Aviation News, July 18), profits for this year should be higher than could have reasonably been expected a year ago. But the fulfillment of this promise rests, of course, with deliveries.

Material Shortages—Blatant shortages still persist. There is, however, lessening a bit. Aluminum remains the sore spot, and despite all the efforts of the industry, and the manufacturers of aluminum, there is little prospect of any but gradual movement. The only reason seems to be that there just isn't enough production capacity in the aluminum industry to meet all demands and won't be for a long time. Another worrying shortage is in fractional horsepower electric motors. There has been no alleviation of the shortage that persisted all through the war.

Employment of production workers is on the upswing and there is apparently no shortage of workers in this category. The same shortage of engineering and technical personnel continues, with little prospect of relief for some time, although the amended draft regulations recently announced should keep the shortage from becoming worse.

In spite of these handicaps there are good grounds for the belief that deliveries for the rest of the year will show great gains over the 23,000 delivered in the first six months of the year. The numbers, of course, will come from the lightplane manufacturers. Their conversion problems, while perhaps no more difficult now complicated than that of the large transport manufacturers, involved for most a new element. This was the institution of mass production "line" techniques, the market being too limited to accommodate this before the war. And far the most part those production lines were not expected to be in full blast until this month.

Beitot Gets Orders

LONDON—The Argentine Aeronautical Purchasing Commission, which is on a visit to this country, has signed a contract with the Bristol Aeroplane Company for the purchase of 15 Bristol Type 170 aircraft valued at some \$2,000,000.

The Norwegian Airways Corporation has agreed to purchase from



FLAMEPROOF WIRE

Demonstrating a new flameproof insulation for electrical wire developed by U. S. Rubber Co. is J. S. McDonald of the company. The low-loss, 30% lighter than conventional wire covering, consists of a layer of glass fiber and a five-percent synthetic rubber. The new wire is known as *Flexog*.

Short Brothers three large four-engine *Spynet* boats of the Southampton Mark VI class.

Supersonic Skeptic Urges Speed Caution

With recognition that his own profession is going to take the rap from the public if supersonic speeds don't live up to their current Black Rogers halo, E. H. Housman, Douglas chief engineer at the St. Louis plant, has tried to put a damper on some of the predictions. He declares that since the Wright Brothers first flew 38 mph 24 years ago, aircraft speeds have moved up only 16 mph a year. "Never has the level light of the distant, straggled-down test airplane exceeded this orderly rate of speed advancement," he says. Further, commercial aircraft usually fly less than half as fast as the record-making planes.

Housman admits that the historic rate of progress might be accelerated for the next few years, having been given a boost by wartime experiments on *strawhairs*. After that, the rate will depend on the amount spent on research. It is possible, he says, to build a transport to fly 500-600 mph and even achieve the speed of sound within a few years, but the cost to develop such a plane would make it competitively impossible.

Avionic Group Will Probe Air Frontier

As an industry that has owed its progress to research, aircraft manufacturers long ago aired a subsidiary profession, residing aerodynamic engineering. With the emphasis now on supersonic flight which brings into play another science, electronics, there is a definite indication that this, too, will foster a new profession.

Pioneer first in the field is the recently-formed *Avionics*, Inc., consisting of a group of aerodynamic and electronic engineers whose aim is to pool their experience and knowledge to create an industry skill. Strictly groping around the edge of a new world of guided missiles, pilotless aircraft and speeds at which human reactions are obsolete.

Avionics, with offices at 274 Madison Avenue, New York City, has as its objective, in the words of President John A. O'Mara, "the solution of specific research and development problems of aviation" in the realm of "high-speed, high-altitude aircraft and their accessories, as well as electronic means to develop long-range navigation and all-weather flying."

To accomplish this, O'Mara and his associates, John O. Getto and A. H. Sullivan, Jr., have brought together a staff with from 10 to 20 years' experience in aviation and electronics, and with first-hand knowledge of developments in these fields in Britain, France and Germany.

At the present time, according to O'Mara, the group is engaged in basic improvements on an engine through the re-design of the fuel system, design of a line of small precision pressure gauges, development of improved ultra-high frequency vacuum tubes, and work on radio altimeters and other airborne radio instruments.

Rolls to China

Rolls-Royce, Ltd. has concluded an agreement with the Chinese Government under which Rolls' jet engines will be manufactured in China. Chinese engineers are now being trained at Rolls' plant in England, while British engineers are supervising the construction of a plant in China. This is the second notable foreign licensing agreement in which Rolls-Royce has signed recently, having previously licensed a plant in U. S. firm, Taylor Turbine.



High road to the Lowlands

Twice they conquer the sea—driving it back from their pastures and fields and cities and towers—crossing its waters in naval trade. For the "Flying Dutchman" fleet of KLM, the Royal Dutch Airlines, will ply the Atlantic on a new high road of speed and comfort, with Lockheed Constellation and the power of Wright Cyclones.

WRIGHT Aircraft Engines

Wright Aeronautical Corporation, Wood Bridge, New Jersey, U.S.A.



CORONA WRIGHT



Here goes the De-Icer...there goes the ice

YOU'RE watching a B. F. Goodrich De-Icer at work. The picture on the left shows what happens under the heat that is being removed from a wing. Picture on the right shows what happens to the ice.

Classics are you've demonstrated the De-Icer principle when you think ice comes from a rubber adhesive—no-ice! Where the ice stays was melted, the ice cubes melted loose from the rubber and were easily removed. De-Icers use long rubber and fabric strips with tubes inside. Tubes are coiled and deflated, through the rubber, cracking the ice. The minimum current is 100 to 120 amperes to do in the heaviest ice and hard parts.

The B. F. Goodrich De-Icer has many advantages that make it the best ice de-icing device ever developed for aircraft. De-Icers generate no external noise. They afford full clearance and clearance from wings and tail leading edges where most ice forms. Weight is very small. De-Icers represent only a fractional percentage of a commercial plane's

gross weight and are in negligible, consolidating the protection afforded planes and passengers.

De-Icers are used by the shape of study and research by B. F. Goodrich laboratory and field technicians to keep designs and open streets of flight and plane development. The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.

B.F. Goodrich

FIRST IN RUBBER

Ryan Adds 'Copters To Diversified Line

Metals Products Division is brightest spot in company picture weakens from major aircraft plants.

Announced by T. Claude Ryan that for Ryan Aeronautical Co. is engaged in helicopter development reaches out the tail of the latest aeronautical work for one of the West Coast's oldest aircraft firms. About the only thing looking at least not yet obtained by Ryan, is a new version of guided missile or supersonic research. But Ryan's diversified activities leaves small room for doubt that those plans, too, may be under development at the San Diego plant.

► **Budget Firehole**—At the moment, Ryan is building the Navy reconnaissance jet and supporting fighter, the PB-1 Firehole. It has also recently installed a test cell for jet engines. It has a new Navy contract for research in metallurgy in connection with development of high-temperature metals as necessary in increasing the power of jet engines. The company recently took on another sideline for the Navy, giving a stepped-up advanced course in aeronautical engineering to 28 Naval officers.

Perhaps the brightest spot in Ryan is its Metals Products Division. It stems from work begun originally in 1918 on stainless steel and exhaust manifolds. The manifold business probably contributes no greater source of income today. Taking advantage of wartime expansion in metal work, Ryan has gone well after general stainless steel fabricating contracts, and even pioneered one true manufacture of castings.

► **Making Exhaust Manifolds**—In the broad-and-better line, Ryan's Metals Products Division is making exhaust manifolds for such large aircraft producers as Lockheed, Douglas, Boeing, Consolidated Vultures and Fairchild.

Other exhaust manifold equipment orders have recently been added from the Allison Division of General Motors which, announced to become AAF's largest source of engines, ask be expected to increase Ryan's backlog considerably in the metal products line.

On the basis of what would seem from the orders to be a solid knowledge and production technique in metals, Ryan's prospects should continue to be bright as the use of jet and gas turbine engines widens. According to AAF and Navy re-

search officers, the problem of obtaining metals able to withstand high temperatures is by no means solved. Then, the Navy contract for multibore research seemed added importance. Linked to this is another recent Ryan order from Messano Mfg. Co. for jet components for Messano's gas turbine engine (Aviation News, July 29).

Founded by Ryan in 1917, the company struggled through the early 20's, in 1930 showed a loss. By 1940, last full peace year, it was growing with sales that year of more than \$1,000,000, and a net of \$100,000. In comparison with other aircraft companies, it was born during the war, in 1944, last full war year, having sales of more than \$2,500,000, and a net of \$700,000. It came out of the war with reserves of better than \$2,500,000.

Nothing on the record would indicate Ryan's growth will not continue. With its wide and varied orders in the company expects to have reached an employment mark of 1,000 this fall.

In the year ending Oct. 31, 1946, Ryan's sales were \$2,548,296, from which it realized a net of \$240,110.

While sales for the current year won't come anywhere near the wartime high, the net proportionately is better. For the first half of the fiscal year, through Apr. 31, Ryan reports sales of \$640,515, and a net of \$277,566. The shape of Ryan's future perhaps is best sketched in its backlog. A total of \$1,214,454, of which \$1,075,923 is for aircraft and engineering and \$238,531 for exhaust systems and jet engine parts.

New Company to Convert Commands at Niagara

A new company formed specifically to convert surplus Curtiss-Wright C-47 Commandos for commercial use has leased the 3rd Modification Shop at Niagara Falls, N. Y., where it expects 900 will be employed while full production has been achieved.

Named United States Services for Air, Inc., the company is headed by Albert H. Neale. Neale is approximately 35 months' experimental work in studying a model that can be approved by CAA for commercial use.

Neale declares that his company's "offer to undertake the necessary modification and type-testing of these aircraft has been received enthusiastically by Government agencies which have extended full cooperation. Once the type-testing has been completed, the company will modify and license these aircraft for commercial passenger use."

Stature Production

Peak production on the Detroit, Lockheed Aircraft's production, is expected to be attained next summer, A. E. Whalley, superintendent of the airplane's assembly, reports. These engineering and planning the production is about complete and more than 1,800 shop orders have been released.

Jobs for wing beams and sub-tops already are in operation and 15 additional sub-assemblies were



TAYLORCRAFT SHORTCUT:

In place of old method of spraying primer on tubular metal aircraft frame, Taylorcraft Aircraft Corp. has constructed this large tank into which an entire fuselage frame is dipped into one chromic acid primer which prevents rust and prepares frame for coating. Tank holds 2,000 gallons of primer. This method is claimed to cut 30 min. from manufacturing time of Taylorcraft RC-12-D.

expected to be in production by last week. At its peak, Behrman production is expected to require about 3,200 employees.

PanAm Converting Plans for Affiliates

To meet the needs of its efficient airlines in Latin America, Pan American Airways has undertaken a heavy reconstruction schedule of various types of aircraft at its Rembrandt, Tex., maintenance base.

Daily conversion work for some ten Latin American carriers, PanAm has turned out civilian versions of DC-3s, DC-4s, Constellation and PVN Cadets. The size of the program is indicated by the 40,000-50,000 production man-hours put in monthly.

Some features of PanAm's conversion work differ greatly from the usual conversion job. For Panagra planes, for example, engine lines must be modified to suit the fuel used over the Andes. Large cargo holdouts must be cut into the empennage for the freight traffic in the interior.

Aviation Maintenance Corp. Will Service ATC Planes

Aviation Maintenance Corp. of Van Nuys, Calif. has been awarded a \$1,700,000 contract by the Air Materiel Command of the AAF to maintain and service aircraft of the ATC's Pacific fleet. It is the first such agreement entered into by the AAF for an aircraft service organization.

Gen. Robert E. Howard, ATC Pacific Division commander, explained the Army's changeover policy has left Air Force installations without sufficient manpower to handle the ground crew work.

Contract terms specify that AMC will staff the Fairchild-Boeing air base with 350 individuals to handle line maintenance, 100-150 and 300-400 inspection, engine change, major repairs and turnaround maintenance. The new contract brings the company's backlog to better than \$1,800,000.

Square-tipped Prop

A two-bladed Hydromatic propeller with square tips, made by Hamilton Standard Division of United Aircraft, will be used on Boeing Aircraft's Model 457 four-engine. This is believed to be the first use of square-tipped



Breakfast Convoys: Maintenance crew of Pan American Airways' base at Rembrandt, Tex., work on the fuselage of a Boeing transport that is being converted for use of PanAm's Latin American affiliates.

blades on a modern transport. Twelve feet in diameter, the propeller is the largest two-bladed Hydromatic ever made.

Miami Modification Firm Will Move to Avon Park

The Miami Aeronautical Corp.'s modification center, located at the Ocala municipal airport for several months, has been moved to Avon Park, Fla.

"We have been unable to negotiate a satisfactory lease here (Ocala)," said Al Zerkel, general manager of the aviation concern, which has been engaged in converting surplus military planes into passenger and freight aircraft.

Zerkel added that his concern had leased a large hangar at Avon Park for \$1 a year. In addition to converting aircraft, the firm has been handling maintenance for airlines. A repair shop, instrument laboratory and other departments are maintained by the firm.

Fleet Merger Widens Scope Of Manufacturing Interest

Fleet Aircraft Ltd., Port Erie, Ont., has been awarded Fleet Manufacturing Co., following approval by stockholders of the merger with Vincent Manufacturing Corp. of Toronto (Aviation News, Aug. 3).

Contrary to initial belief as to the effects of the merger, Fleet Aircraft production apparently will increase, along with a widening of their manufacturing interests. Vincent, president of the merged concern, states that Fleet will push output of the Canuck, two-place biplane, from two to

four a day, and plans to make a four-place model.

In addition, the company has manufacturing and sales rights in British contracts to all current Consolidated Vultee training planes and Fleet trainers, and Canadian distribution rights to Waco aircraft.

The new company will also manufacture a plywood trailer, the CabinCat, to sell for \$685. It is understood that an order for 12,000 of these trailers has been placed by R. E. Evans Motors, New York.

Another manufactured item will be aircraft fenders. Fleet Aircraft was founded in 1930 and was closely connected with Consolidated Aircraft, then located in Buffalo.

Martin Pays 75 Cent Dividend on Sept. 15

The Glenn L. Martin Co. announced last week a third quarterly dividend of 75 cents a share, payable Sept. 15 to stockholders of record Sept. 3. The same amount was paid in both the first and second quarters.

Reviewing the backlog figure made public a month ago, Martin stated that new orders in July, less \$4,346,718 worth of deliveries in June, left a backlog of \$14,646,441, or, as against a June 30 figure of \$173,000,000.

At the company's annual meeting, president Glenn L. Martin also announced establishment of a research and development department which will formulate a plan for the company's operations for the next five years. All design and research will be laid down within the scope of this plan.

All present officers and directors were re-elected.

PRIVATE FLYING

NACA Propeller Formula May Throttle Lightplane Noise

Theodore report to industry cites prop blade tips as worst noise offender and offers design factors to make their sound audible at 500 ft.

By ALEXANDER MUEHLBY

A formula for predicting accurately the noise of lightplane propellers, with design factors which can reduce the propeller noise to make it audible at 500 ft., has been developed by the National Advisory Committee for Aeronautics, and may well be a major factor in reducing the noise of lightplanes, if the industry elects to use it.

The formula is contained in a report to be issued about Sept. 15 by NACA to the industry, for Dr. Theodore Theodore, head physicist and chief of physical research at NACA's Langley Field (Va.) laboratory, who wrote it.

The noise factor in personal planes has been a major objection of property owners to establishment of clean airports and airports near their homes. It is greater utility of the clean-air landing facilities can be obtained through reduction of noise perceptibly caused by the propeller, the personal plane industry will have taken a long step toward making wider public acceptance and utilization of the personal plane.

George West Factor:—The Theodore report is an expansion of an informal discussion which he gave last June at the Detroit Light Plane meeting of the Institute of the Aeronautical Sciences (Aviation News, July 1).

One advantage of the formula lies in the fact that it will eliminate necessity for laborious and frequently inaccurate parameter readings on completed airplanes. Theodore cites propeller tip speed and its accompanying noise permeability effects as the largest single source of noise in the entire airplane-propeller-propeller, and concludes that efforts to make engines are well nigh pointless, unless the major advance, the propeller is quieted.

His formula criticizes the relationship between the various factors, including various harmonics and sound coefficients which make up the noise level produced by a given propeller design.

Starting with the noise level of a typical two-bladed propeller with a tip speed 95 percent of the speed of sound, the NACA experiment requires the noise level could be reduced 35 percent by using a four-bladed prop turning at 50 percent of the speed of sound, while the noise would be cut 48 percent from the original level, by using an eight-bladed propeller turning at 35 percent of same speed. These calculations were based on an airspeed speed of 55 mph.

Enthusiasm Quoted:—Preliminary inquiries in the industry, and discussion following the NACA physicist remarks at the Detroit meeting, indicate that his proposals are being received with tremendous enthusiasm, in several quarters. Largest defect in the manufacturing cost of a multi-bladed design, and the additional expense added to personal plane prices.

Dr. Theodore does not expect much vibration trouble with the multiple blade propellers of this nature, when low power are used.

Over 100 hp. he is not so sure. The sound-reducing effect of a rug around the propeller tip, advocated by some engineers, is not mentioned in the NACA scientist's opinion.

There is a difference of opinion about the effective use of engine mufflers on lightplanes even when conventional two-bladed propellers



DESIGN FOR FOLDING WINGS:

Henry Clark, Jr., American, M. T. motion artist, sketches the possible solution to the hangar shortage, which offers possibilities to manufacturers if they make their lightplanes with folding wings. Designed for greater utility, the arrangement provides for a smaller bulk in the storage of the plane, which can be attached to the rear of the plane-owner's car. This combined with an arrangement to fold and pivot the wings, as they lie flat against the fuselage, makes it possible to tow the plane out first, between garage at home, and airport.

The Leader Must Lead....

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are used. An appreciable reduction in wear level is reported by manufacturers on several places which have installed mufflers, but Dr. Theodorson contends that the engine muffler is a minor factor compared to the propeller in the overall noise.

Experience indicates that a high-wing airplane transmits more noise to the ground than a comparable low-wing plane, presumably as a result of the soundboard effect of the high wing. Walter Jaconetti, Piper chief engineer, reported recently.

CAA Orders Faulty Engine Piston Check

4000 Continental A-65 engines require piston replacement as soon as possible with 50 hour dead line.

A CAA order requiring replacement of faulty piston pins in more than 6000 Continental A-65 engines, in light airplanes scattered throughout the country, last week created a long-lined disturbance among private flyers and flying service operators.

McGrath's Continental Motors Corp., Indianapolis, Ind., which had discovered the faulty piston pins through service failure reports, was endeavoring to get replacements set, and to notify owners whose A-65 engines had serial numbers between 2,456,656 and 4,330,896, instructive that their piston pins had to be replaced.

Hagless Affected—The order also affects any A-65, A-65, A-65 engine which have had overhauls and have had A-21422 piston pins at one three-ring pattern installed, since Sept. 20, 1946.

The CAA order provided that the pins be replaced "as soon as possible, or in any event within 50 hours of engine operation after Aug. 25."

J. B. Hartwell, Jr., general manager of Aircraft Owners & Pilots Association, Washington, estimated that the order affected approximately 2,000 to 2,500 of his association's members, and requested that all AOPA members with Continental engines in this category communicate with AOPA headquarters relative to the replacement.

Schuchel Hit—It was pointed out that probably the first to be hit by the 50 hour limitation would be aerial service operators, and flight schools, using 65 hp treat-



MODEL V OVER HUDSON:

Usual cleanup photograph of the new Cessna Model V production airplane shows the two-place plane-planned construction step frame over the Hudson river. (Martin & Kleinman photo.)

ers, which put in as much as 50 hours as a job. At the rate flown by most private flyers, the 50 hours of engine time would give them probably two months time in which to arrange replacement parts.

James Kinnison, Continental chief engineer, said that the company was producing two types of replacement. The company will either provide new piston pins, or a piston replacement kit, including a new-type tighter fitting piston, larger pin and rod. It is understood that most of the engine owners thus far contacted have indicated preference to buy the kit, which Kinnison said would be offered at a "nominal figure" rather than to get the pin replacement alone. He reported that the company had already shipped out 1,600 kits, and was moving rapidly to make and ship the balance.

"We see no reason why any plane should have to sit on the ground for want of replacement parts," he said. "We have instructed our dealers and distributors to set up a priority system on the replacements, on the basis of greatest need. If any plane is actually grounded, our company will do its best to take care of it promptly."

New Inspection — The remote fires in the pins which have caused a number of engine failures, were confined to the block of engine castings, when some

methods of inspection did not catch them. Since that time however the company has installed new electronic inspection equipment, which detects faulty parts.

Kinnison said he expected the situation to be completely taken care of in 90 days. It is understood however that flying organizations and individual owners are calling for larger production of the replacements at the Continental plant, so that the parts will be provided more quickly.

It was reported that a number of private flyer owners of planes with affected engines, had voluntarily grounded them as a safety measure, until they could get replacement parts.

CAA officials said that the 50 hour deadline had been set in order to give Continental time to supply the replacements, so that at least most of the planes would not have to be grounded.

\$200 Buzz Job

The chairman of the Colorado Aeronautics Commission, Morris S. Jackson, was fined \$200 last week in municipal court at Grand Junction, Colorado for late flying and "buzzing" the town and airport. The commission has been conducting a campaign for safety in private flying, and opposing low flying and buzzing.

The Bala Field operation covers the municipal airport, and includes besides usual maintenance and repair facilities, flight training, charter flying, aerial photography and other services. Frank W. Hulse, Birmingham, is president of Southern Airways, which is distributor for Bala. Roger and Republic planes, Cline Service products and Bendix aircraft, operate.

Arkansas Flying Farmers Organized at Little Rock

Thirty-five farmers registered for the organization meeting of the Arkansas Flying Farmers Association, at Adams Field, Little Rock, recently. Thirty-three of them came from Arkansas county, center of the state's rice-growing industry. About 45 of the registrants came on their own planes. A banquet closed the membership meeting about 330 flying hours.

Charles Rose, Sherwood, was elected president. Other officers: Louis J. Davis, Peabody, vice-president; Alan Cleve Barker, Little Rock, secretary-treasurer; G. B. Jones, Arkadelphia, was elected as head of the largest flying farmer family in the group. Jones has 15, his son and his son-in-law are all licensed pilots, and own three planes in the family.

The Arkansas group, like other state associations which have been formed recently, is affiliating with the National Flying Farmers Association, Baltimore, Md. The University of Arkansas agricultural extension service is a sponsor of the state group.

Scouters Test

Thirty Alouett II's two-axle low-cost "sky scooters" which have much of the appearance of the Lockheed "Little Dipper," which John Edgar designed, are now being to set up its own company, received municipal title rights recently at McPherson airport, New York City. Designed originally for a 50 hp. engine, the new plane and its modified to accept a 75-hp. Lycoming 3100. With that power plant it is expected to produce a sea-level cruising speed of 114 mph, 126 mph at 10,000 ft., and a maximum speed of 45 mph. In preparation for maintaining light loads and maximum production, the three companies have moved from Turnback to 6800 Woodway Ave., Van Nuys, Calif.

Briefing For Private Flying

INTERNATIONAL BREAKFAST—Sea Island airport, Vancouver, B. C., was the rendezvous point for 120 Seattle, Wash., private pilots and 80 Canadian planes, for an international breakfast, demonstrating the steady coming up of private aviation in the west. The flight sponsored by the Seattle Aircraft Owners & Pilots association, required the full time of a hangar for three days, to fill out the necessary forms required of U. S. planes when they crossed the border.

JUMPERS, RIGGERS INCORPORATE—Able of the National Parachute Jumpers Association will be taken over by the newly organized National Parachute Jumpers-Riggers, Inc., Mineola, N. Y., chartered by the Secretary of State of New York. The organization will seek to provide regulatory for jumpers and riggers, scientific and engineering competitions and exhibitions, and to advance research and development and cooperate with other air groups.

ACTION DEMANDS—A Minneapolis close of operations, private pilots and plane owners recently launched criticism of the Minneapolis Metropolitan airport commission for delay in providing additional facilities for private flyers. Robert Amick, director for air transportation, said work would start next spring on three fields for private flyers, in Golden Valley and Crystal areas of Minneapolis, and at Bloomington. Recommendations for three other private flyers fields, with "hubs of hangars and shops" were presented. The club, sponsored by the Japan Association of Commerce plans to develop a coordinated program of private flying airport needs, to be recommended to the commission for prompt action.

BIPLANE EXECUTIVE PLANE—Composites entered to design executive planes for their own transportation use, will be interested in Douglas Aircraft Company's executive plane, a completely rebuilt new surplus C-47, mid with a new plane governor at \$13,400, and down-converted last work at Washington National airport. The one we now had made for lightness, including two cockpits, while smaller version has four cockpits. Built-to-order, radio, and complete galley and kitchen facilities are provided. Even the seats of the pilot and co-pilot are not further upgraded. The passenger compartment is sound-proofed double thick. Bob Nelson, Minneapolis-based representative, offers to make the cabin so quiet you can hear the most hangar rattle as the wheels when the plane is in flight.

SUBSIDIES DOWNTOWN—In the first seven months of 1946 the number of CAA-approved ground and flying schools has more than doubled, climbing about 605 as of Jan. 1, to 1,021 on Aug. 1. In July alone, 148 new schools were given approval, and 78 were re-approved. The record increase is credited to two factors: a steady increase in private flying, and the GI bill of rights which provides government sponsorship of flight training of veterans. A number of the schools which have sought CAA approval, opened before the veterans' program started, without approval, but the Veterans' Administration and state administration the educational work for veterans have shown uniformly to permit that schools with such program have CAA approval. That has brought in a few older schools during the veterans' program, as applicants for CAA approval, but largely the increase has consisted of new schools which have been opened since Jan. 1.

774 GI TRAINEES AT BALTIMORE—An AVIATION NEWS survey at Baltimore's air flying school, recently showed that approximately 774 veterans are learning to fly as civilians under the privilege of the GI Bill of Rights. About one-third of the group served in non-fight aircraft components such as mechanics, gunners, radiomen as navigators, while in the army, army air service corps. A large majority of these military trainees are seeking only a private pilot's license. Largest of the Baltimore GI group was at Ralph Abner school, Pacific airport, where 65 were enrolled in the primary course, and several in a commercial pilot course.

—Alexander McNulty

TRANSPORT

State Department Seeking Pacts To Weave U. S. Global Air Network

India is critical existing link in present picture as convention begins with China over landing rights and efforts for agreements in Latin America are renewed.

Main burden of weaving the global network of U. S. international airlines has shifted to the State Department, according to CAP's recent dispatch (AVIATION NEWS, Aug. 24) of the last international case pending since the Board's proposal of world wide commercial air pact in 1944.

Since then, the Department has secured operating rights in 18 foreign countries for American air carriers, under bilateral agreements achieved in 18 foreign nations to fly to the U. S. and back U. S. info—estimated at approximately 85 percent of the world's air commerce—on lucrative routes.

U. S. Foreign Carriers — These points of entry, most of them in the high altitude peninsula center of the Eastern seaboard have been awarded the limits of 12 foreign nations. Six others — Spain, Greece, Ireland, Turkey, Lebanon, Egypt—with which agreements have been effected have no specific gateways to this country yet, largely because their carriers and current operations have not been organized.

In one instance—Saudi Arabia—the Department has negotiated operating rights for a U. S. carrier without subjecting reciprocal operating privileges to American.

The ports of entry at which foreign airlines from the immediate 12 countries have been authorized to land and depart U. S. carriers for international commerce.

Great Britain—New York, Chicago, Detroit, Philadelphia, Washington, Baltimore, Boston, New Orleans, Miami, Palm Beach, San Francisco.

Canada — Boston, New York, Cleveland, Chicago, Duluth, Seattle.

France — New York, Boston, Washington, Chicago, United Nations location when established.

Denmark, Ireland, Norway, Sweden—New York and Chicago.

Czechoslovakia, Portugal, Belgium, Switzerland, The Netherlands—New York.

Germany—to be completed by the Department, before operations under CAA awards can begin, are arrangements for air rights in more 35 countries.

Efforts to negotiate with Russia, the Balkans, Mexico and India have been underway. The Department has abandoned attempts to obtain rights in Russia and the



SURF RESCUE.

Alouett II, Air Transport, Inc., Philadelphia, whose Alouett II-21 is shown towing a "drowning man" to shore at recent Ocean City, Md., demonstration, has set its sights on Alouett II's capacity to make waves. CAP has applied to CAA for a certificate authorizing individual transportation of mail, persons and property over emergency land and water routes including New York City, Philadelphia and Chicago and in New York state. Company now has two B-21s, with another to be delivered this week. One Bell II-21 is due this month, another in October, and two each in November and December. (Press Association photo.)

Russian-allocated Balkans, which apparently will remain welded off from international air commerce for some time to come. It plans a second attempt to negotiate with Mexico at an indefinite future date, and has dispatched George Brownell, former Soviet Consul General and assistant to the Assistant Secretary of War for Air, to expedite an arrangement with India.

India—Cabinet India—Failure to obtain operating rights in India would leave a critical hole in the globe-circling U. S. route authorized by CAA, since North Atlantic operations of Pan American and TWA leave India to connect with PAA's and Northwest's Pacific operations to the Orient.

Other bilateral air agreements are to be negotiated with New Zealand, Australia, Newfoundland, China, the Philippines, virtually every South and Central American country — Columbia, Argentina, Uruguay, Uruguay, Venezuela, Argentina, Peru, Haiti, Guatemala, San Salvador, Cuba, Haiti, and the Union of South Africa.

Ship-ops operations under which U. S. carriers are authorized to operate into New Zealand and Newfoundland will be supplemented by formal bilateral agreements in the near future, the Department is seeking to obtain the Department Aviation Division negotiations on a U. S.-Australian bilateral agreement also are well advanced.

Peru—In Chile, Argentina, Colombia, Bolivia, Ecuador, the U. S. is conversations looking to an air agreement. Chile's act of wartime airports are determining rapidly and the Chileans are eager for foreign aid to repair them in return for landing rights.

In South and Central America, the State Department plans bilateral negotiations with several agreements on the government level all agreements entered into by Pan American Airways before the war. U. S. policy is set to proceed individually to make agreements with foreign countries Pan American agreements do not allow for South American operations by Brazil, restricted by CAA, and several South American countries have indicated that they now want operating rights into the U. S. — a concession Pan American obviously could not grant.

Relations with several American countries are at the bottom of the Department's agenda while Pan American, only U. S. operator

AIRCRAFT...

...AND PARTS

The War Assets Administration, as a disposal agency for government-owned surplus, has a large inventory of both planes and component parts. This stock-pile is being added to frequently by the Armed Forces as more and more aircraft and equipment is being declared surplus.

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Simple Seaplane Regulations

RECENT AGITATION by the Ohio River Division of the Corps of Engineers to institute separate regulations for seaplane traffic on navigable inland waterways has been met by the Civil Aeronautics Board. This threat by the Engineers to add to the red tape aviation already must contend with was the subject of a recent editorial on this page.

Informal requests sent by the Ohio Engineers to their Washington headquarters not only sought an entirely separate set of requirements aimed at preventing float and seaplanes from landing or taking off within sight of a river confluence, the action would have subjected one more government authority into air traffic rule making.

Fortunately, Civil Aeronautics Board is already well along in revising Part 60 of the Civil Air Regulations to include certain basic "rules of the water." Several conferences between government and industry have been held, and Washington officials believe that new new requirements will be introduced. The Coast Guard already has agreed tentatively to adopt four simple rules.

The Corps of Engineers should have no right to set up its own rule book for airmen, although it possesses authority to approve placement and location of wharves, mooring ramps, and other facilities bordering or entering upon navigable waterways.

The draft of the new Part 60 will be circulated soon for industry comment. Prompt attention by all interested parties, and immediate reporting to the Board of all complaints and suggested revisions, will insure fairer regulation for the rapidly developing floatplane activities.

Rugged Roads to Airports

THERE ARE FEW MORE accurate indices of the abilities of airport operators as local public relations men than the roads which lead to their fields. Frederick W. Hiller of Worcester County, Massachusetts,

tackles the subject in the New England Aviation Trades Association newsletter, inadvertently revealing his progressive attitude toward winning new customers for his airport and keeping those he has.

"I do not know what percentage of airports in this commonwealth or in New England have poor roads leading to them, but I do know that in central Massachusetts there are at least 20 airports where the towns have failed to take into consideration the value of the airport to the town, and who are doing nothing about fixing up the roads."

"Some of these hardheaded politicians who are so leeches need to be publicized in some way for their utter lack of progressive thought. Instead of appreciating what a private owner of a commercial field is doing, in saving the taxpayer money, most of these selectmen only think of the little bit of tax revenue that will have to be raised to blacktop a road. I am personally blacktopping over half a mile of public highway leading into my airport. I don't know what we must do to shame the town fathers, but as past president of the Worcester County Selectmen's Association, I bring this matter up at every meeting, and I think it would be well if this could be publicized and sent to all the selectmen's associations in the state."

Massachusetts has no monopoly on bad roads to small airports and airfields. Mr. Hiller has set an example for several thousand other operators in the other 47 states. He is doing something about it.

A Good Friend Leaves

PROMOTION OF PETER MARSHFIELD to the post of director of planning and projects for the British Ministry of Civil Aviation is welcome evidence that London appreciates his outstanding public relations accomplishments in the United States as British civil air attaché. We know of no other Englishman in aviation who has made so many friends here. They regret that his new duties will take him back to Britain. We shall miss him.

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Aero Enterprises' General Manager, C. Hall McKay (left) and Executive Vice President Louis W. Mack, Jr.

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